

Claim Amendments

1. (currently amended) A device for conducting binding reactions, said device comprising:

(a) two chambers in fluid communication, wherein one of said chambers (~~larger chamber~~) has a volume that is greater than a volume of the other chamber (~~smaller chamber~~), and

(b) an array of features comprising biopolymer probes, in each of the two chambers wherein the biopolymer probes are non-diffusively bound to a surface within each of the two chambers and wherein the features of the array are arranged in a predetermined manner.

2. (original) A device according to Claim 1 wherein the chambers have capillary dimensions.

3. (currently amended) A device according to Claim 1 additionally including instructions that the chambers be exposed to an analyte having components of higher concentration which will bind to the features in said other ~~the smaller~~ chamber and components of lower concentration which will bind to features in said one of said chambers ~~the larger chamber~~.

4. (currently amended) A device according to Claim 1 for conducting hybridization reactions, said device comprising two chambers in fluid communication, said chambers each having an interior with capillary dimensions wherein one of said chambers has interior dimensions that are larger (~~larger chamber~~) than the interior dimensions of the other of said chambers (~~smaller chamber~~), each of said interiors comprising a linear microarray of features comprising biopolymer probes, said other of said chambers ~~smaller chamber~~ comprising probes that are directed to target molecules having expected concentrations in a sample solution that are equal to or greater than a predetermined value and said one of said chambers ~~larger chamber~~ comprising probes that are directed to target molecules having expected concentrations that are less than said predetermined value.

5. (currently amended) A device according to Claim 1 wherein features of said one of said chambers ~~larger chamber~~ comprise a greater number of biopolymer probe molecules per feature than features of said other of said chambers ~~smaller chamber~~.

6. (original) A device according to Claim 1 in communication with a detector.

7. (currently amended) An apparatus for conducting hybridization reactions, said apparatus comprising:

(a) a housing having an interior with capillary dimensions wherein said interior comprises at least two chambers in fluid communication wherein one of said chambers has at least one interior dimension that is larger (~~larger chamber~~) than at least one interior dimension of the other of said chambers (~~smaller chamber~~), said interior comprising a microarray of features comprising biopolymer probes non-diffusively bound to a surface in said interior, said other of said chambers ~~smaller chamber~~ comprising probes that are directed to target molecules having expected concentrations in a sample solution that are equal to or greater than a predetermined value and said one of said chambers ~~larger chamber~~ comprising probes that are directed to target molecules having expected concentrations that are less than said predetermined value, wherein the features of the microarray are arranged in a predetermined manner, and

(b) a detector in communication with said housing.

8. (original) An apparatus according to Claim 7 wherein said housing is part of a microfluidic system.

9. (currently amended) An apparatus according to Claim 7 wherein said detector is a Charge-Coupled Device CCD or a Complementary-symmetry/Metal-Oxide Semiconductor CMOS detector.

10. (original) An apparatus according to Claim 7 further comprising a fluid dispensing device.

11. (currently amended) A device comprising an elongated web comprising a linear array of biopolymer features wherein said linear array is from 1 to 5 features in width and

said elongated web comprises at least two chambers in fluid communication, said chambers each having an interior with capillary dimensions wherein one of said chambers has a volume that is larger (~~larger chamber~~) than the volume of the other of said chambers (~~smaller chamber~~), said other of said chambers ~~smaller chamber~~ comprising probes that are directed to target molecules having expected concentrations in a sample solution that are equal to or greater than a predetermined value and said one of said chambers ~~larger chamber~~ comprising probes that are directed to target molecules having expected concentrations that are less than said predetermined value wherein the probes are non-diffusively bound to a surface in the interior of each of the two chambers and wherein the features of the linear array are arranged in a predetermined manner.

12. (withdrawn) A method for conducting binding reactions, said method comprising:

- (a) introducing a sample into a device according to Claim 1 wherein said biopolymer probes bind to components in said sample, and
- (b) incubating said sample in said housing under conditions for carrying out said binding reactions.

13. (withdrawn) A method according to Claim 12 wherein said binding reactions are hybridization reactions.

14. (withdrawn) A method according to Claim 13 further comprising examining said array for the results of said hybridization reactions.

15. (withdrawn/currently amended) A method according to Claim 14 wherein said examining is conducted using a detector in communication with said device.

16. (withdrawn/currently amended) A method according to Claim 15 wherein said detector is a Charge-Coupled Device ~~CCD~~ or a Complementary-symmetry/Metal-Oxide Semiconductor ~~CMOS~~ detector.

17. (withdrawn) A method according to Claim 18 wherein said biopolymer probes are polynucleotides or polypeptides.

18. (withdrawn) A method comprising forwarding data representing a result obtained from a method according to Claim 17.

19. (withdrawn) A method according to Claim 18 wherein the data is transmitted to a remote location.

20. (withdrawn) A method comprising receiving data representing a result obtained from a method according to claim 17.

21. (withdrawn/currently amended) A method according to claim 12 wherein features in said one of said chambers ~~the larger chamber~~ bind to higher concentration components in the sample and features in said other ~~the smaller~~ chamber bind to lower concentration components in the sample.

Claims 21-25. (canceled).

26. (new) A device for conducting binding reactions, said device comprising:

(a) two chambers in fluid communication, wherein one of said chambers has a volume that is greater than a volume of the other chamber, and

(b) an array of features comprising biopolymer probes, in each of the two chambers wherein the biopolymer probes are non-diffusively bound to a surface within each of the two chambers and wherein the features of the array are arranged in a predetermined manner and wherein at least some of the features in the interior of said other chamber comprise a greater number of molecules of biopolymer probe per feature than features in the interior of said one of said chambers.

27. (new) A device according to Claim 26 wherein the chambers have capillary dimensions.

28. (new) A device according to Claim 26 in communication with a detector.

29. (new) A device according to Claim 26 that is part of a microfluidic system.

30. (new) An apparatus according to Claim 28 wherein said detector is a Charge-Coupled Device or a Complementary-symmetry/Metal-Oxide Semiconductor detector.